

ANNUAL REPORTS
FOR
YELLOWSTONE NATIONAL PARK



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FOR
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YELLOWSTONE NATIONAL PARK

Horace M. Albright, Superintendent, Yellowstone Park, Wyoming
1924

General Statement

Yellowstone Park was established March 1, 1872 (Secs. 2,474 and 2,475, R. S. or 17 Stat., 32). It was the first national park to be established in the world and is our largest park. Its area is 3,348 square miles, or 2,142,720 acres, lying in Wyoming, Montana and Idaho.

Weather

The fall months were characterized by generally pleasant weather with very little snow. December was cold and the year terminated in a cold wave of extreme severity, the lowest temperature at Mammoth being 34° below zero on December 31, which is not only the lowest of record for December, but with two exceptions, the lowest for the entire period of record for the past 37 years. At Buffalo Ranch 50° below zero occurred on the last day of the year. January was practically normal in temperature, but greatly deficient in snowfall, as were all the winter and spring months. Unusually mild and spring-like weather prevailed in February, and the highest temperature of 51° at Mammoth has not been exceeded in February since the record began in 1887. The light snowfall of winter and spring together with the record-breaking dry weather of May and June, greatly retarded the growth of forage.

May and June in the Yellowstone, normally wet months when grass and wild flowers grow rapidly and luxuriantly, this year were the driest in recorded history of the park. Records have been kept for nearly 30 years. Fortunately, rains in the early part of July came in time to save the range in the higher altitudes where snow remained through most of the dry period, but below the 6,000 foot contour the range never recovered from the scorching and stunting caused by lack of moisture in the growing period. So much for range conditions affecting animal life.

In the higher altitudes, during July and August, rains came so seldom that the forests became very dry and ready to burst into flame the moment a flash of lightning struck in them. In late August, several electric storms, unaccompanied by rain, started the much feared conflagrations and until well into September the rangers and road crews were occupied in fighting fires that were raging in remote sections of the park. The largest fire was on the Fitchstone Plateau and burned over 2,500 acres of timber. It was necessary to carry several miles, on pack horses and mules, not only food but also drinking water for the fire fighters. This is the only big fire the Yellowstone has suffered since 1919, which was one of the worst fire years in the history of the West.

Drought Also Affects Road Conditions

Roads in this park for several years have been kept in remarkably good condition, although subjected to very heavy traffic. This year, however, they dried out early in the spring, and it was never possible to get them into entirely satisfactory condition. High winds during the summer swept away most of the top surfacing of fine gravel and lack of funds prevented initiation of regreveling operations on an adequate scale. So the end of the season sees the Yellowstone road system in distinctly poorer condition than it was a year ago. Heavier traffic, of course, must be credited with part of the deterioration of the highways.

Travel in 1924

This year 144,156 people visited the park as compared with 138,562 last year, an increase of 5,806.

There was a decrease in rail travel this year of 3,540 under last year. The western entrance shows a decrease of 2,706 by rail; the northern entrance 705, and the eastern entrance 508; 207 came in via the Lander or southern gateway. All entrances, except the north and south, showed an increase in automobile travel; 32,225 at the east; 26,553 at the north; 31,520 at the west; and 9,768 at the south.

The west entrance continues to lead in rail travel and the east Entrance is the motorists' favorite gateway.

The largest number of park entrance registered in a single

day during the 1924 season was 2,660 on July 22nd. Compare this with the high figure of last year, 2,859 (largest number ever registered in a single day in the history of the park) on August 7th, and 1,983 on July 23rd, 1922. The heaviest train travel occurred on August 12th when 840 people were delivered at the rail gateways. The heaviest rail travel arriving at a single gateway was 488 at West Yellowstone by the Union Pacific System on June 26th. It is interesting to note that during the 1924 season there were 17 days with over 2,000 visitors entering the park.

There was an increase of 9,559 in motor travel over last year.

The heaviest motor travel at park gateways on one day was 502 automobiles carrying 1,844 tourists on July 22, compared with 475 automobiles carrying 1,623 tourists on July 17th, 1923. The Eastern, or Cody entrance, enjoyed the largest motor travel for a single day on July 5th, when 224 cars carrying 696 people entered the park.

Total Season Travel by Entrancees - 1924 and 1925

Category	Rd 1 Visitors	By Automobile Cars	Automobile Visitors	By Motorcycle Motorcycles	Motorcycle Visitors	By Walking, Horseback, etc.	Pre- Season Visitors	Total Visitors
1924								
North	12,439	8,199	28,583	48	68	476		40,565
West	20,409	9,353	51,180	38	42	96		52,127
East	6,922	9,950	32,285	50	90	313		39,687
South	307	5,871	9,763	20	25	695		10,925
Pre-Season Visitors								
(North & West)		336					1,124	1,124
Total	41,064	30,080	100,186	165	225	1,569	1,124	144,158
1925								
North	14,117	8,908	28,690	43	71	542		43,420
West	23,117	6,401	23,531	33	44	177		45,867
East	7,407	7,703	25,496	32	43	305		33,316
South	167	4,247	14,107	31	44	56		14,774
Pre-Season Visitors								
(North & West)							975	975
Total	44,506	27,259	91,224	141	207	1,140	975	138,362

Personnel

During the year the maximum number of employees on the payrolls was 107 appointees and 348 temporary mechanics, skilled laborers, laborers, etc., a total of 455 on August 1, 1936. The minimum number of employees on the payroll occurred during the month of January, when there were 68 appointees and 4 others on the rolls. Financial Clerk P. E. Bilbert was made Assistant Superintendent on May 1, 1934. This is a new position authorized this year.

National Park Service Activities

The activities of the National Park Service were approximately the same as those of last year.

Administrative Department

Headquarters Office: During the fiscal year from six to eight clerks were employed in the headquarters office on general correspondence, files, personnel, purchasing, time-keeping, miscellaneous financial matters, information, and a wide range of other duties to this and to other parks. Approximately 16,500 pieces of mail were received and 17,500 dispatched.

Appropriations: Appropriations made available since the date of the last report are as follows:

Act	Purpose	Amount
April 2, 1924	Deficiency Act. Repair to roads following cloudbursts	\$ 27,700
June 5, 1924	Administration, protection and Maintenance	336,800
	Construction of physical improvements	<u>36,000</u>
		\$ 400,500

Revenues for 1924: Revenues collected during the 1924

fiscal year were as follows:

Automobiles and motorcycles	\$ 195,785.30
Hotels and Camps	37,808.50
Transportation	48,069.82
Stores	12,196.57
Miscellaneous	<u>5,272.28</u>
Total	\$ 299,132.97

All of these funds were deposited to the credit of miscellaneous receipts in the United States Treasury.

Revenues for the 1925 fiscal year will amount to approximately \$115,000.00.

Engineering Department

This department is in charge of Engineer A. J. Barney, aided by Assistant Engineer W. I. Davis.

Road Maintenance: During the 1924 season 340 miles of road were maintained out of the total mileage of 356 of which 29 miles is in the park, 28 miles in the Shoshone Forest and 50 miles in the Teton Forest. Twenty-five crews were employed on this work, requiring 140 employees on this work, requiring 140 employees and 54 teams.

Twice daily during the season 107 miles of road were sprinkled. Eight horse-drawn and 9 truck sprinklers were used.

Four of the truck sprinklers were provided with 3 inch centrifugal pumps operated by the main engine for drawing water from the streams.

Snow Removal: In both Sylvan and Dunraven Pass snow was removed by blasting and shoveling in order to have these roads open in time for the season. Sylvan Pass was opened to travel June 12th, Dunraven Pass June 12th, the south side of Mt. Washburn June 27th, and the north side June 30th. The road to Tower Falls, the Buffalo Ranch and Soda Butte was opened on May 7th; to Norris Geyser Basin on May 10th; West Yellowstone to Old Faithful April 28th; and cars reached Canyon and Lake On May 13th. On May 18th the first car crossed the Continental Divide from Old Faithful to West Thumb.

Road Improvement: The section of road along the Firehole River between Firehole Canyon and Old Faithful, 15.7 miles is being graveled this season. The gravel is loaded with a steam shovel and hauled with teams, tractors and a tractor with trailers.

Along both sides of the road between the Lake and Canyon, ditches are being constructed to provide better drainage, and permit the sub-grade to dry out. About four miles of this road will be improved in this way.

Over 40 galvanized iron culverts of 12 and 16 inches diameter were installed this season on different sections of the park roads.

Along the road to the Lake about 2 miles from West Thumb, a log bulkhead 3 feet high and 1600 feet long was constructed to protect the roadway from waves when the Lake is high.

To provide space for future expansion of the Old Faithful Permanent Camp a new roadway 1300 feet long was built and the old road abandoned.

Buildings: A bunkhouse was constructed in Dunraven Pass 16 x 24 feet, long trim frame building, for use of snow crew in the spring and maintenance crew in summer.

At West Yellowstone a new and very attractive gateway and checking station was built by the rangers. The idea of this combined entrance and ranger station was originated by the chief ranger, who supervised the construction. A similar gateway and station was erected at the Cody or eastern entrance, but only as a temporary expedient to serve until a permanent structure can be designed and built.

Two snowshoe cabins were built, one at Heart Lake and another at Cache Creek. Two more buildings, the Heart Lake cabin and the West Yellowstone entrance were built under the personal supervision of the chief Ranger.

Canyon Sewage System: A sewage system, which will serve the public auto camp, the ranger station, stores, etc., at that place was constructed this season. Nine concrete manholes were built, 2200 lineal feet of 8" and 900 lineal feet of 6" sewer tile was laid and a concrete sedimentation tank 12' by 36' was built. A chlorinating apparatus will be installed to treat the sewage.

Reconstruction Work in Shoshone Forest: Repairing the damage done to roads and bridges in the Shoshone Forest by the cloudburst of July 22nd, 1923, was commenced in October, 1923, discontinued during the winter and resumed March 18th, this year. At Elk Fork the steel bridge was raised and abutment repaired by driving poles around the base and placing new concrete. New log bridges were built at Clocktower and Canyon Creeks and a 24 foot concrete T beam bridge built over Gunbarrel Creek. To prevent further damage to the roadway by flood waters, a total of 543 lineal feet of rock filled log crib was constructed at different points, also considerable channel change and other protection work.

Survey of Lease Sites: All the sites occupied by park operators, numbering 42 in all, were resurveyed and new maps and descriptions made to bring the leases up to date.

Landscape Work Carried Forward

In addition to erecting the new buildings according to

the landscape engineer's plans, much more landscape work was accomplished. Worthy of special mention is the fact the telephone line between Mammoth and Norris is being rebuilt as a matter of heavy maintenance and is being placed in a swath cut some distance from the road. The Hotel Company is cooperating in this very important work, and its officers enjoy with the Yellowstone superintendent and me a feeling of pride in the total removal of unsightly telephone poles of two separate and distinct wire systems between headquarters and Norris Junction, a distance of 20 miles. Next year the telephone reconstruction will be continued to Yellowstone Lake.

The old buildings in front of the Lake Hotel were removed last autumn, many old barns and sheds were razed at various points, and general clean-up programs carried out at several points of interest. If we now had the means to clean up the roadsides of the Yellowstone, this park would be in first-class condition so far as its landscape protection is concerned.

Sanitation Department

This department, in charge of Master Plumber William Wiggins, cooperated closely with the engineering department in construction work, and was assisted constantly by the United States Public Health Service officers on duty here.

- (1) Public automobile camp development: Mammoth: Installed 12 laundry tubs with two 5 K V thermostatic electric heaters.

Constructed cesspool can 600 feet of 6 inch sewer tile for laundry.

Canyon: Completed installation 31 flush toilets, 2 wash basins, 4 urinals, 3 $\frac{1}{2}$ water hydrants, 30 wood tables and benches. Laid 2200' 8" and 900' 6" sewer tile. Sertic tank under construction. No earth toilets in this camp.

Lake: Installed 8 flush toilets, 2 wash basins, 1 urinal, 24 wood tables and benches. Laid 200' 4", 100' 3", and 1500' 1 $\frac{1}{2}$ " water pipe, the latter to sertic tank.

Fishing Bridge: Installed 16 flush toilets, and wash basins, 2 urinals, 130 wood tables and benches. Constructing water system with 4500' 4" iron pipe, settling tank, dam.

Sylvan Pass: Installed dam with 12,000 gallons of water for camp.

Tower Falls: Installed 8 flush toilets, 2 wash basins, 1 urinal. Constructed cesspool. Laid 200' 6" sewer tile, and 600' 2" iron water pipe.

(2) Mosquito Control. Extensive ditching and oiling at the Canyon, Lake, Upper Basin and West Thumb in the spring, with great improvements in the mosquito situation at all places except the Canyon.

(3) Garbage and Refuse Disposal: All dump grounds being cleaned up, tins and glass buried, garbage not eaten

by bears buried, and paper, truck and wood burned in the automobile camps.

(4) Miscellaneous: Special investigations being made of water supplies for Upper Basin, Lake, Canyon and Mammoth. Operated five septic tanks and chlorinators. Operation of two swimming pools supervised.

Protection Department

This department is under the leadership of Chief Ranger S. T. Woodring, and the ranger force prior to June 16th consisted of the chief ranger, three assistant chief rangers, and 27 park rangers. On June 16th 52 temporary park rangers were added to the force, making a total summer strength of 84.

Winter Activities: Regular and special patrols were made throughout the fall, winter and spring season for the purpose of game observation and protection. Telephone lines were maintained through the winter.

Summer Activities: The work of the ranger force during the summer season was materially expanded and covered a wide range of duties too numerous to mention here.

Trail Maintenance and Improvement: The trail mileage in the park now totals 842, exclusive of game trails used on patrol; the new trail construction during the year was 32 miles and the entire trail system has been cleared of timber

and repaired. The new trails are located briefly as follows: Mammoth Hot Springs Formation, connecting all points of interest, 3 miles; east side of the Yellowstone River from Sublime Point to a point 7 miles below. This is known and designated as the Eagle Scout Trail, following an appropriate dedication ceremony in honor of the builders of the trail - Eagle Scouts from Oregon, Washington, Montana and Idaho. New trails in the Tower Falls and Cache Creek districts account for the remaining 22 miles of construction.

Fish Planting: All records as follows:

	1922	1923	1924
Total collection of black spotted trout eggs from park waters	16,751,920	31,370,000	32,000,000
Number of eggs collected in park, hatched and returned to park waters or planted as eyed eggs	7,373,800	12,795,000	18,544,000
<u>Total number fish planted in park</u>			
Black spotted trout collected in park	7,373,800	12,795,000	18,544,000
Black spotted trout received from Montana State Hatchery	1,000,000		
	8,373,800	12,795,000	18,544,000
Eastern Brook Trout received from Montana State Hatchery	116,000	100,000	49,400
Rainbow Trout, received from Montana State Hatchery	120,000	100,000	
Lock Devon Trout received from Montana State Hatchery			41,800
<u>Total Fish Plants for year</u>	8,609,800	12,995,000	18,635,200

Buffalo Ranch Operations

The principal improvements at the Buffalo Ranch during the year consisted of the following:

The erection of a new machine shed, dimensions 70 x 30 ft. Fifty acres of land were cleared and plowed, headed to oats and irrigated but not cut this year. Other activities have consisted of maintenance and repairs to fences, roads and buildings, and the harvesting of the hay crop which totaled 320 tons.

The new Buffalo herd, which numbered 672 animals when the last report was submitted now totals 750. Since the last report 120 calves have been born. The weaning and feeding of calves was begun on January 7th and feeding of the main herd was begun on January 25th. There were 31 cows culled and 31 females, making a total of 62. Sixteen were castrated. Buffalo feeding was discontinued on April 21st, 15 tons of hay having been fed. There were 5 cows and 1 bull shipped to ecological pasture during the year and 6 bulls, cattles and crias, slaughtered; their hides and heads were saved. Winter kills amounted to 1 only - a cow. There was 90 tons of hay on hand when buffalo feeding was discontinued on April 21st.

Hay Ranch Operations

Cows and horse feeding at the various hay ranches during the year of the season accounted for 126 tons of hay and of this amount 25 tons were fed at Yoncape; 66 tons at Straight Creek, and

35 tons at Gardiner. Balance on hand, Blough Creek 210, Gardiner 230, total 440 tons. An accurate statement of this year's tonnage cannot be had to date on account of much of it being recently stacked, but the approximate tonnage is as follows: Blough Creek 175; Vanders 32; Gardiner 64; Total 271; including Buffalo Ranch, Grand Total 334, less stock 30 tons.

Further dry ranch activities consist of the following: Blough Creek, 25 acres plowed, put under irrigation and seeded to oats; harvested, reseeded and seeded to grass. Vanders, 50 acres, plowed, put under irrigation and seeded to oats; harvested; reseeded and seeded to grass.

1100 feet of flume was constructed at Vanders.

Predatory Animals

During the year 1916 coyotes were killed.

Natural Features of the Park

Observations of wild life, seasons and past spring activities, birds, flowers, birds, etc., have been made by the Park Naturalist E. J. Sawyer, and seasons and also briefly recorded as follows:

Crop Conditions: Crop conditions have been excellent throughout the year. The heaviest conditions of May and June (the driest of record) retarded materially the forage growth on the principal winter forage, but generally have not fall

throughout the month of July gives reasonable assurance of prospects favorable for the approaching winter season. The losses last winter were unusually moderate and as the whole did not exceed the losses of the preceding year which was placed at 2%.

Buffalo, tame herd: Twelve buffalo bulls of fine proportions were kept at Mammoth Hot Springs for show purposes throughout the summer season. Other remarks in connection with the tame herd will be noted in the paragraph relating to the Buffalo Ranch.

Buffalo, wild herd: Reports during the past year do not indicate any material increase in the wild buffalo herd. However, we have no reason to believe that the total count of the preceding year (76) is not a fair statement of the herd total at this time.

Mountain Sheep: Ranger reports during the past winter show an actual count of 217, the record count of the preceding year being 200. A moderate increase is indicated from these figures and the estimated total of 230 appearing in the report of last year appears to be substantially correct.

Antelope: Antelope have done well. The losses for the season were 5 and the total of the herd less the losses is 520, which shows a substantial increase over the total of 255

reported for the preceding year. All reports indicate a general increase this season. The antelope range was entered by two rangers throughout the winter season.

Antelope: Actual counts last season totaled 121 and they were reported from all sections of the park. The estimated total for the year is 365. Information has been received that the herds will not be likely to kill more in Spring this fall as a substantial increase in their numbers is anticipated for next year.

Deer: White tail deer are extremely limited as to numbers and are rarely seen. The total reported during the past year was 8, one at Mammoth and 7 in the Goose Creek country east of the Yellowstone River. The one at Mammoth was accidentally killed. White deer are increasing throughout the park; an actual count of 714 was submitted last winter which is probably considerably less than half of the total number in the park.

Elk: The elk losses during the past winter were very moderate and the calving season was unusually favorable. Full counts were not had on the elk herds last spring but substantial increases in the herd totals of the preceding season are assumed.

Black Sheep: It was not unusual to see as many as 25 bands on the usual and best view tour of the park; the blacks and browns were most commonly seen as they particularly

frequented the main traveled ways. More than the usual number of cubs were observed.

Grizzly Bears: This animal was seen in greater numbers than last year. They were commonly seen at the feeding grounds at Canyon and at many as 17 were counted at one time. They do not frequent the main traveled ways and are seldom seen before sundown. Grizzly cubs were observed in more than the usual numbers during the past season.

Bears: are increasing in all sections of the park that are suited to their special requirements.

Rabbits and other small animals: There is no particularly noticeable increase in the small animals inhabiting the park excepting, perhaps, the ground squirrel (squirrel), which has come to be a nuisance in some localities. All small animals are plentiful and were constantly observed with interest by park visitors throughout the season.

Birds: The bird life of the park is, in general, about the same as in the past year. The interest in bird life has been much stimulated and added to by the new collection of eggs and nests of local species, a small collection of bird skins and several water color drawings of park birds. The drawings illustrate twenty-three species.

Insects: There has been very considerable damage to the forests by certain defoliating insects and the Darters fire

hart beetle. The heaviest damage by this defoliator is in the West Yellowstone region where thousands of acres of larch-
-spruce pine have been destroyed and a much larger area seriously
-affected. Spraying operations have been carried on for
-several miles along the West Yellowstone road, under direction
-of Dr. F. C. Orinland, and Dr. J. C. Jordan, entomologists
-of the U. S. Department of Agriculture.

Insects

The spruce budworm defoliator continued active in the
-Hollister region and on Crescent Hill. Spraying will be
-necessary next year to keep this defoliator from destroying
-trees along the Grand Loop Road above Camp Roosevelt.

The Douglas fir bark beetle is being fought in forests
-about Camp Roosevelt.

Flora: The wild flowers, numerous, typical and abundant,
-occur in well finished numbers in all their established
-habitats. They remain one of the chief attractions of the
-park.

Goats and Goat Herds

Mountain Goat Herds: Large herds, formerly active, in
-early June. The activity of smaller herds seems to have
-shifted toward the west. The butterfly, sometimes called the
-Goat, an old herdsman, has reduced the activity and is in-
-creasing in size and attractiveness. Smaller herds are
-active. These herds are spreading eastward. There is now

activity on Highland terrace.

Morris Geyser Basin: In general about as usual. Constant Geyser, which suddenly stopped erupting in 1927, occasionally resumed activity.

Lower Geyser Basin: Conditions substantially as usual.

Upper Geyser Basin: Old Faithful has played at intervals averaging about 62 or 63 minutes, but varying considerably. Restless geyser was active this season, and the Bee Hive played after the Giantess as usual. There were two eruptions of the Giantess. The Oblong was more active this year than usual. Total activity in the Basin apparently about average.

Hot Bath: There are one or two new springs near the Lake Shore Geyser. The Fishing Cone is accessible by land connection, no board or other bridge being needed to reach it, owing to low water.

Information Department

30,677 people visited the information office at headquarters during the season; 2,870 in June; 13,344 in July; 12,328 in August, and 1,935 in September. Compare the total of 30,677 with 33,822 visitors to the information offices in 1923 and 30,209 in 1922. During the season at the information office and at the ranger stations in the park 83,560 free publications regarding the park were distributed and 5,501 government publications, including 874 portfolios,

were sold. Compare this total sale with 6,732 publications, including 1,001 portfolios disposed of last year. In addition 1,041 books of other publishers were sold.

Lecture Service: The lecture service at Mammoth was performed by Park Ranger E. J. Gibbs, who delivered 3 lectures each evening before audiences totalling approximately 68,000. Lectures were similarly conducted at Old Faithful and were attended by approximately 36,000 persons.

Guide Service: Two guides were maintained at Mammoth and two at Old Faithful, each man conducting two parties a day over the formations. 11,008 visitors were guided over the formation at Mammoth Hot Springs and 27,701 over the formations at the Upper Geyser Basin, making a total of 38,709. Dr. Henry S. Conard, Park Ranger, performed the duties of nature guide in the Tower Falls district and a total of 1,223 persons availed themselves of the nature guide services during the course of the season.

Electrical Department

Electric System: The following table shows the total production of the power plant and disposition of current as compared with similar data for the fiscal year 1923:

The peak load for the year was 124 kilowatts as compared with 124 kilowatts last year.

	1922-23	1923-24
Total production in kilowatt hours	525,014	451,002
Sold to park utilities	42,191.91	85,703
Consumed for street lighting	17,824	23,706
Balance, consumed by government buildings, for power & lighting, lost on lines, etc.	250,036.09	332,729

Telephone System: New line Mammoth to Norris, 20 miles. 25' cedar poles used, each pole with two 8-pin cross arms; 10 wires to be strung for the present, 4 for Hotel Company and 6 for Park Service; the line being constructed jointly by Hotel Company and Park Service and is located as much as possible out of view of the road, in a swath cut through the timber parallel to and 30 feet from the road. The two present un-sightly lines will be removed. Line being constructed as a matter of heavy maintenance and replacement, and will be continued next year to Yellowstone Lake, and following year to Old Faithful. One additional wire is being strung on poles between Old Faithful and West Yellowstone, and beginning at the 7-mile post from Norris towards Madison Junction to the Firehole River, thereby changing the line from a grounded circuit to a metallic circuit.

Telegraph and Telephone Statistics

Telegrams

	1922-23	1923-24
Government sent	1,047	1,190
Government received	576	744

<u>Telegrams</u>	<u>1922-23</u>	<u>1923-24</u>
Commercial sent	1,092	1,561
Commercial received	914	1,146
Total calls on government switchboard	83,197	85,800

Painting Department

The Master Painter and his assistants painted exterior and interior of the hospital, ten large structures, a number of small buildings, roofs, etc. Painted equipment, including 8 sprinklers, 10 freight trucks and a number of wagons. Over 800 new signs were painted and old signs were retouched, relettered and overhauled. All fire alarm boxes were painted, glass lettered and the interior of quarters were redecorated during the winter months.

Mechanical Department

The mechanical department maintained 42 trucks and 9 automobiles, a steam shovel, a caterpillar engine, compressors, pumps and sundry engines; repaired road machinery and equipment including gravel loaders, graders, drags, dump wagons, etc.; repairs to shovels, picks and sundry other road and fire tools. Between seven and eight hundred horses were shod.

The carpenter made repairs to buildings, built boxes for freighting trucks, assisted in building six additional sprinklers which were retouched, brake blocks for dump wagons,

erected fire siren, alarm boxes and built a number of earth toilet buildings, etc.

A maximum of seven and a minimum of five men were employed in the shops.

Property and Transportation

Under the direction of the Steward and Master of Transportation 2222 tons of material, equipment and supplies were moved from railroad terminals to headquarters. From headquarters 11 trucks were operated through the park supplying road camps, construction camps, etc. The total mileage of the trucks was approximately 95,000. A maximum of 15 men were engaged in the warehouse and in the transportation work.

Yellowstone Park Camps Change Hands

It is with great regret that I record the temporary withdrawal from park activity of Mr. Howard H. Hays, the former president of the Yellowstone Park Camps Co. Mr. Hays, early in May, 1924, sold his interests in the Yellowstone permanent camp system because of failing health. He is recovering now and I hope the time is not far distant when he can again enter national park activity with his usual energy and public spirit.

Very few men in America know more of the national parks than Mr. Hays does. He has visited nearly all of them, and is familiar with their problems. There is still a broad field in the national parks for his boundless energy, fine personality,

and great activity, and all his friends earnestly hope for a speedy and complete restoration to health.

The Yellowstone permanent camps were sold by Mr. Hays to Mr. Vernon Goodwin, of Los Angeles, who has operated them very efficiently during the past summer.

If Mr. Goodwin recognizes, as I think he does, the necessity for maintaining the personality, spirit, and enthusiasm of the camp personnel, together with its informal entertainments, he will succeed splendidly in his new venture and in all that he undertakes, if along the lines upon which the camps have been conducted, he will have every encouragement and assistance that we are capable of giving him.

Improvements by Public Utilities and Individual Operators

Yellowstone Park Camps Company:

Mammoth: Completion construction of main building; constructed large coal house; warehouses reconstructed and painted; 4 new flush toilet buildings constructed; 52 new two-room and 21 new one room frame lodges erected; barn and large corral constructed for saddle horses; landscape work begun in front of main building. Improved fire protection at four different places, each place being equipped with stand pipes and about 250' of 2" hose.

Old Faithful: Old service buildings torn down and large main building erected, including large dining room with spacious veranda overlooking Old Faithful Geyser, modern kitchen, large commissary, refrigerating plant and ice making machinery, butcher shops, pantry coolers, etc. Constructed a large dormitory for girls. Erected new boiler house and installed 80 H.P. boiler, 62 H.P. engine and 5 K.W. generator, steam pump, etc. Two new flush toilet buildings erected; 25 new two-room and 25 new one-room lodges built; established fire protection similar to that at Mammoth.

Lake Camp: Additions to side and rear of kitchen; large loading platform built; 2 new flush toilet buildings constructed; 27 two-room and 25 one-room lodges built; erected new buildings for housing of camp tools and excess equipment; fire protection established.

Canyon Camp: Extension to curio shop; building erected for housing tools, etc.; two new flush toilet buildings erected; two new dormitories erected for employees; 30 new two-room and 26 new one-room lodges constructed; sewerage line from septic tank extended; new engine and power house built.

Camp Roosevelt: New building erected to serve in winter as caretaker's quarters and in summer as manager's office and residence; 5 two-room and 3 one-room lodges built; considerable improvement to old lodges accomplished.

Cody Road Lodge: Erected new main building, housing lobby, verandas, dining room, kitchen, employee's dining room, bakery, pantry, storeroom, flush toilet room. Five two-room and five one-room lodges erected for overnight tourists; ten two-room and six one-room bungalow lodges erected for employees quarters.

Yellowstone Park Hotel Company:

Harmon: Built entire new kitchen and installed all new equipment and 20-ton refrigerator plant. Extended old dining room, doubling its capacity. Much improvement work was done, including installation of new light fixtures, new fire escapes, radiation in dining room, laundry tubs, lavatories, bath tubs, freight and linen elevators, fire equipment, etc. Added 20 rooms to girls' dormitory and built new mens' dormitory. Thirty rooms of hotel redecorated. New barber shop and beauty parlor built.

Old Faithful: Installed new lavatories, new electric generating plant, electrical equipment, increased water supply, and made other miscellaneous improvements.

Lake: Completed new wing of hotel; kitchen rebuilt; new kitchen equipment installed; capacity of dining room increased 50%, old part of building re-painted, re-plastered and re-wired, and lobby remodelled. Many other improvements have been made, including installation of new lavatories, radiation in

dining room, new 80 K. W. electric generator, two 100 K. W. boilers, electrical equipment, fire escapes and other fire equipment, etc. Two-story girls' dormitory, consisting of 97 rooms, erected.

Canyon: Installed 235 lavatories, necessitating replastering, painting and kalsomining, new electrical kitchen equipment, fire fighting and other miscellaneous equipment. Sanitation improvements made.

Yellowstone Park Transportation Company:

Purchased the following new equipment: 60 11-passenger white busses; 7 white touring cars; 2 2-ton white trucks; 1 3-ton white truck with gasoline tank; 7 Ford trucks; 1 Ford roadster; 30 new windshields, 100 new speedometers. Overhauled entire fleet of 250 cars. New repair shop and storage house for gas and oil completed at Tower Falls. Additions to bunk houses and mess houses at Mammoth, West Yellowstone and Canyon. Work began on new mammoth machine shop and garage situated near Gardiner. Numerous miscellaneous improvements made.

Stores and studios enlarge

At Old Faithful, G. A. Hamilton enlarged his store and installed much new equipment. This store is now the largest and best operated store in the national park system. Mr. Hamilton also built this year small but very attractive store structures at West Thumb of Lake Yellowstone and at the Fishing Bridge.

At the Canyon of the Yellowstone, J. M. Haynes built a large studio and plant for developing and printing pictures. This new structure is constructed of logs and is one of the most beautiful business establishments in the park. Mr. Haynes also established a new picture stand in the Lake Hotel. As usual, he made hundreds of new negatives of park scenes. This year, in a new and specially equipped boat he explored the entire shore line of Lake Yellowstone, photographing objects of interest all along his route.

Henry P. Brothman: Thirty foot reinforced concrete extension to swimming pool $5\frac{1}{2}$ to 8 ft. deep. $1\frac{1}{2}$ ft. long, and concrete dressing room and observation platform with 30 dressing rooms $3'6" \times 5'$; $24' \times 50'$ of original swimming pool cut off and made into wading pool for children, 2 to $2\frac{1}{2}'$ deep; 1000 ft. 10" wood stave pipe line.

George Whittaker, Merchant: Two sleeping rooms and bathroom added to Canyon Store building; new gas pumps and tanks (Capacity 5,000 gallons) installed at Canyon and Mammoth; new garage erected at Mammoth on site of old garage; new frame building covered with canvas, $45' \times 32'$ erected in public automobile camp at Mammoth, used as summer branch store.

C. A. Hamilton, Merchant: New frame store with log trim erected at Lake Fishing Bridge and filling station with

5,000 gallon tank completed at this point; new lighting fixtures and miscellaneous improvements installed at Lake store; new log trim store with 60' frontage erected at Thumb and filling station with 5,000 gallon tank; float constructed for care of row boats in conjunction with Boat Company. A new wing has been added to the Old Faithful store and the building is now 160' x 110', the largest store in the national park system. In the Hamilton stores a special effort has been made throughout the season to keep prices on staple products at a minimum and many favorable comments have resulted.

Park Curio Shop: On Mammoth Hot Spring Terraces established a soft drink booth, and an experimental delicatessen stand in the Mammoth Auto Camp.

Franchises and Permits

There were but two changes in the franchises of the long-term public utilities. A new contract covering the operation of a curio shop and delicatessen stand was granted to Pryor and Trischman extending over a period of ten years from January 1, 1924. A new contract was also granted to Mr. H. T. Brothers to operate a bathhouse at Upper Geyser Basin, extending over a period of ten years from January 1, 1924.

Department of Justice - U. S. Commissioner's Court

Hon. John W. Meldrum, Commissioner since 1904, held court whenever there were cases to be tried. During the year 34 cases

were tried by the Commissioner. There were 25 convictions and 4 acquittals. 4 were bound out to U. S. District Court, and 1 case pending. A total of \$666.00 in fines, exclusive of costs, was imposed on defendants found guilty. There were 16 cases involving violations of speed regulations, 2 cases of burglary, 2 cases of larceny and 10 violations of the Federal Prohibition Act, 1 case of assault, 2 cases of defacing natural phenomena, 1 case of unlawful possession of traps, total 34

Post Office Department

Mr. C. E. Hansen, Post Office Inspector for this District, visited the park during the winter and made plans for the transfer of the post office to larger quarters during the busy months of the tourist season. This change will take effect before the opening of the 1925 season.

Business has increased in proportion to the increase in travel.

Department of the Interior

Geological Survey: Water Resources Branch. Continued its observation and inspection of gauging stations on park streams. Installed a cable and other equipment as part of permanent staff gauge at this point.

General Land Office: On August 25, 1924, sold the town of West Yellowstone under the land laws.

Department of Commerce

Bureau of Fisheries: Another brilliant egg harvest, hatching and fish planting record of last year. This year gathered 32,000,000 eggs, of which 8,626,000 were planted in the park as eyed eggs, and 6,398,000 as fry. Shipped 13,456,000 to adjoining states, to other national parks and to certain national forests. District Supervisor C. F. Culler in charge.

Department of Agriculture

Weather Bureau: The work of the bureau was continued under Observer N. H. Fletcher.

Bureau of Entomology: Detailed Dr. F. C. Craighead and Dr. J. C. Swenden, entomologists, to continue the study of forest conditions in the park, and extensive spraying operations were conducted under their supervision in the West Yellowstone district during the summer season.

Bureau of Biological Survey and Forest Service: Coordinated, in June, in a special study of elk range conditions in and adjacent to the park; Major L. A. Goodman in charge of survey.

Treasury Department

Public Health Service: Continued its cooperative work, Sanitary Engineer N. B. Hannon in general charge, and Associate Sanitary Engineer I. V. Mendelsohn in charge here. Surveyed lines for Canyon automobile camp sewer system, designed system,

and ordered materials; surveyed lines from Canyon Hotel reservoir to Cascade Lake; from Iron Creek to Old Faithful Inn; and from Transportation Company quarters to Canyon Hotel; directed mosquito control measures; collected and shipped water samples; inspected automobile camps, garbage and refuse dump, swimming pools, etc.; operated five chlorinators and five septic tanks; Dr. J. E. Wolfe, Acting Assistant Surgeon, inspected sanitation of hotels, camps, etc., and general health of the community.

Educational Work

In Yellowstone National Park the educational work has been under the general direction of the park naturalist, E. J. Sawyer, and temporary Park Ranger Frank Thone. The latter resigned from the service early in July to accept a position with Science Service in Washington, D. C.

Park Naturalist Sawyer, who is an artist, has painted many of the birds and animals of the park for the museum, has added some mounted specimens, and in other directions has expanded the collections in the museum considerably.

The lecture service at Mammoth was continued this year and was enjoyed by upwards of 70,000 people. The ranger guide service over the formations at Mammoth and at Old Faithful was likewise carried on as heretofore and was greatly enjoyed by park visitors. A new departure in Yellowstone's educational work was the employment of a nature guide at Camp Roosevelt.

Prohibition Service: The Federal Prohibition Director for Montana cooperated splendidly in enforcement of the Volstead Act, detailing special and secret agents to West Yellowstone and Gardiner, and occasionally, on request, sending them into the park.

Publicity

Through the cooperation of the public utilities, Lawrence Martin, formerly head of the United Press Service in Washington, D. C., was secured to direct park publicity and out of the abundance of his experience and great ability obtained for the park most gratifying results.

Opening of the Park

The opening ceremonies were held on June 20th at the north entrance under the auspices of the Livingston Chamber of Commerce, and the Upper Yellowstone Valley Citizens Association. President L. E. Flint, of the Livingston Chamber of Commerce presided. Music was by the Gateway City Band. The speakers were: Hon. T. L. Oddie, U. S. Senator from Nevada; Hon. Joseph M. Dixon, Governor of Montana; and Capt. John R. Quinn, National Commander of the American Legion. Commander Quinn delivered the principal address, pleading for the preservation of the national park, and the general conservation of our natural resources, and then swung open the chain that formally opened the Yellowstone

for the 1924 season. All of the speakers stressed the importance of the national parks as Americanizing influences and advocated their protection and wise development.

Death of Ex-Park Superintendents

During the year three ex-superintendents of Yellowstone died - Col. F. A. Boutelle, Supt. 1889-91; Brig. Gen. James B. Irwin, Supt. 1897-99; and Lieut. Gen. S. B. M. Young, Supt. 1897 and 1907-08.

Vital Statistics

There were 4 births and 10 deaths in the park during the year.

Hospital and Medical Service

Important as these improvements described on the former pages is the new hospital service established this year. The fine big hospital building erected as a part of Fort Yellowstone has not been in operation since 1918, and never before has it been operated in the public interest, it being strictly an Army institution for the soldiers when the military patrolled the park.

Early in the year the hospital was remodeled, the wards being cut up into rooms, the rear section made an isolation ward, and the whole building repainted. It was then leased to Dr. C. A. Windsor, eminent surgeon of Livingston, Montana,

who added much equipment and furnishings and conducted the hospital and medical service in a most commendable manner. Many major operations were successfully performed and a wide range of general medical and surgical practice was performed.

From the day the hospital was opened it was a success in the highest degree and was much appreciated by all who had occasion to require its service. And, in general, the fact that the hospital was available reassured and pleased the visiting public.

I want to take this opportunity to publicly commend Doctor Windsor for the unselfish interest and fine public spirit that prompted his undertaking this medical service which not only involved a large investment by him, but also great risk in that the venture might result in heavy loss. I trust that the financial results of the season's operations will be such as to encourage the continuance of this very efficient and essential service.

School

School opened September 4, 1923, and closed May 13, 1924. There was an average enrollment of 16 pupils, 11 girls and 5 boys; teacher, Mrs. Jessie L. Cummings. The school was maintained by private subscription.

Religious Services

Services were held in the Chapel at least twice and sometimes three or four times every Sunday during the tourist season. Congregational, Baptist, English Lutheran, Episcopal, Methodist and Catholic services were conducted.

Recommendations

1. That the park to be extended to include the Teton Mountains, headwaters of the Yellowstone, and other country naturally belonging to the park.
2. That all irrigation and other projects that would result in exploitation of the park be condemned and killed as they are proposed.
3. That a new fish hatchery be built at Lake Yellowstone and fully equipped. The present hatchery is inadequate in every respect and unsightly in the extreme.
4. That more funds be provided for upkeep of roads, trails, telephone lines, and other improvements; for the ranger service; for the buffalo and other ranches; for general sanitation for public camp grounds.

